

Oct. 18, 1932.

C. H. AYARS

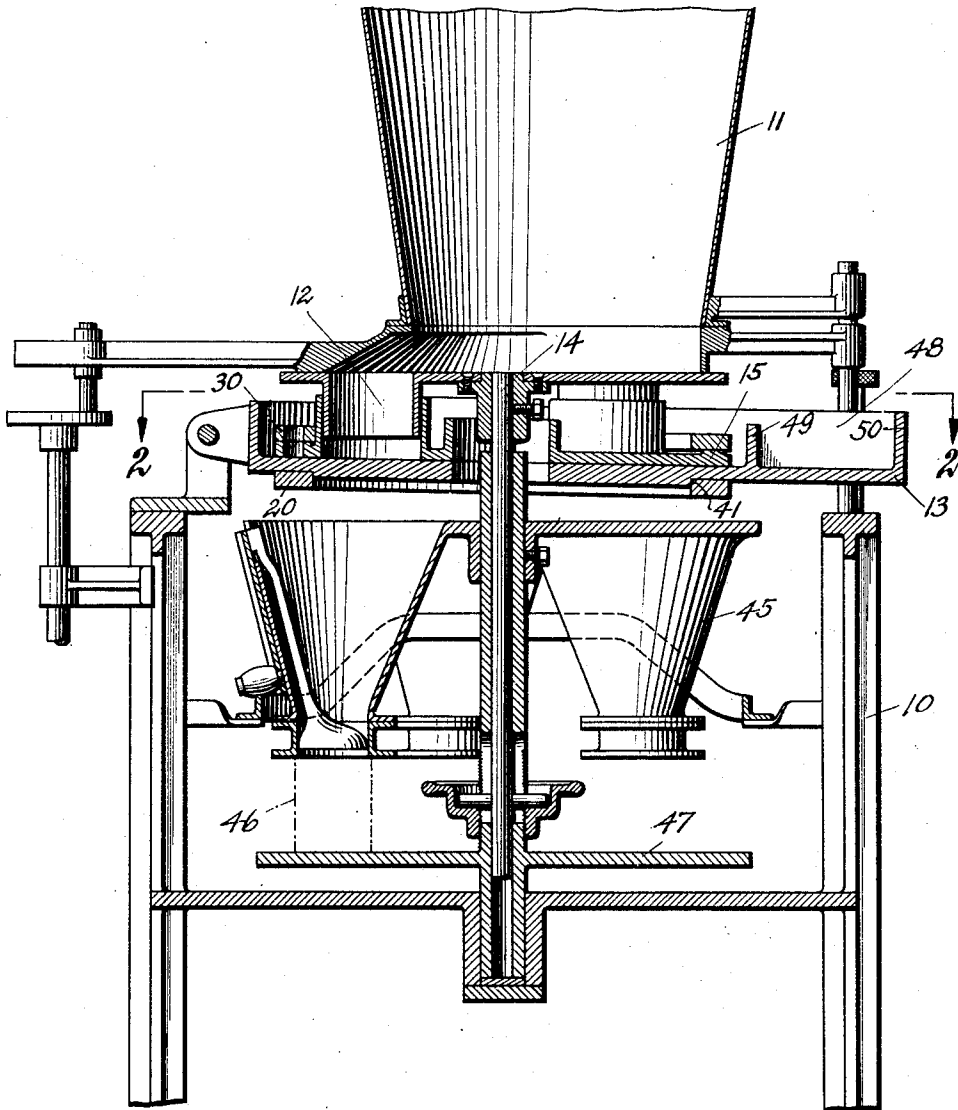
1,883,460

CAN FILLING MACHINE

Filed March 5, 1929

4 Sheets-Sheet 1

Fig. 1.



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CAN FILLING MACHINE

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Fig. 2.

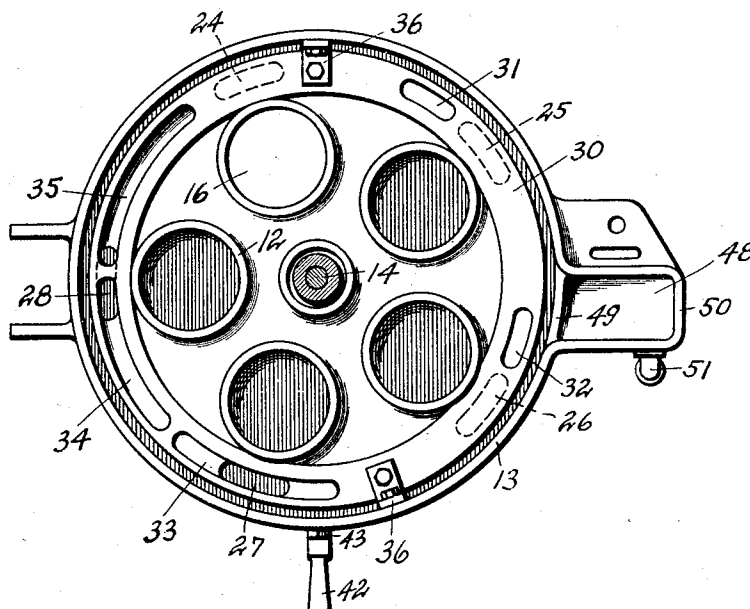
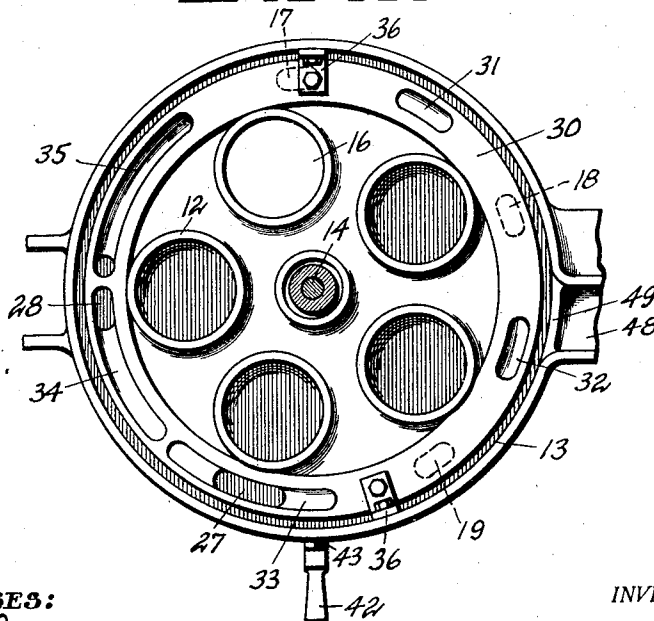


Fig. 3.



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Fig. 4.

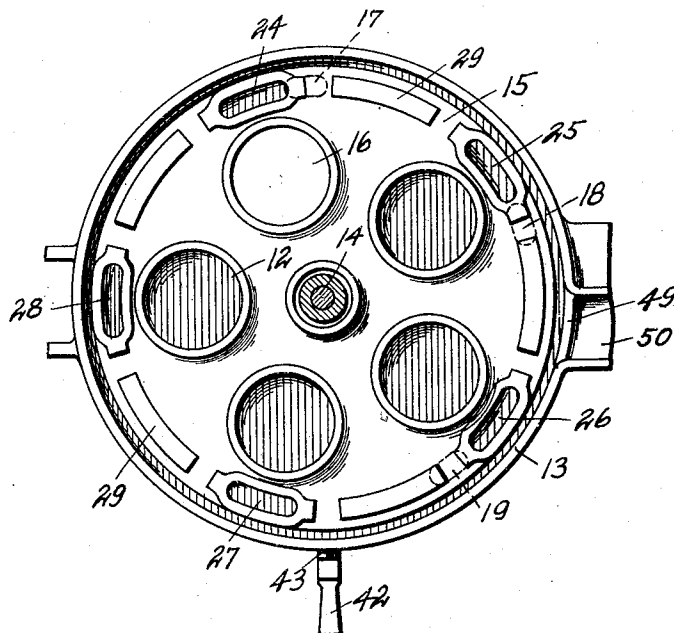
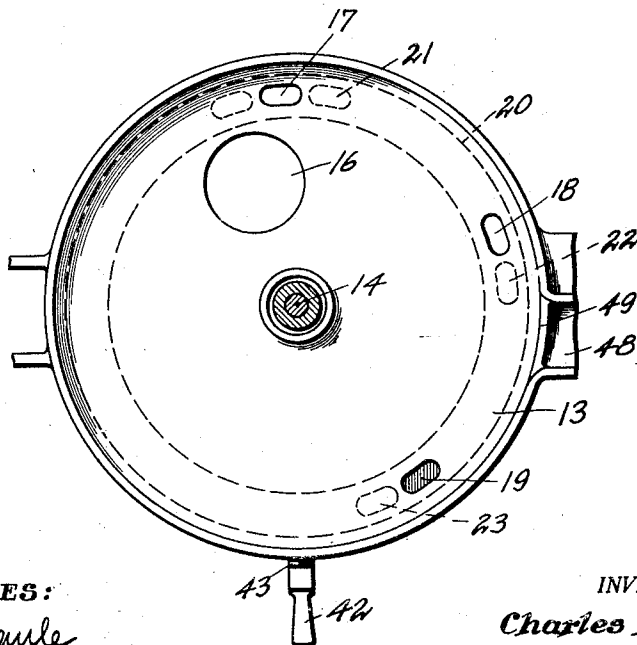


Fig. 5.



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4 Sheets-Sheet 4

Fig. 6.

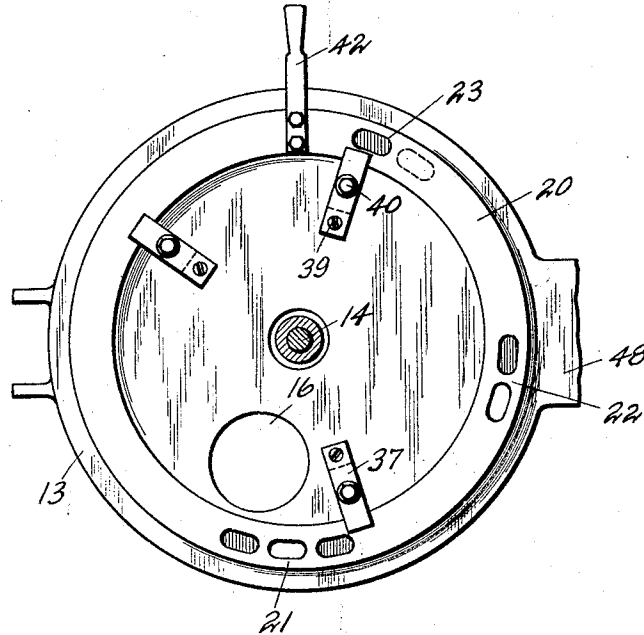


Fig. 7.

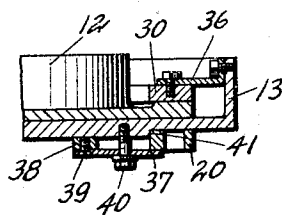


Fig. 8.

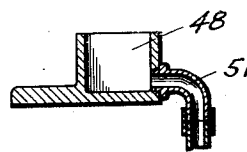
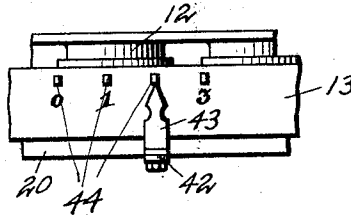


Fig. 9.



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UNITED STATES PATENT OFFICE

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CAN FILLING MACHINE

Application filed March 5, 1929. Serial No. 344,330.

The present invention relates to can filling machines and particularly to the supplying of measured quantities of liquid as juice or preserving fluid to the can.

An object of the invention is to improve machines of the above character.

Further objects are to provide, in a can filling machine, an improved, effective and simple arrangement whereby liquid may be supplied to cans in measured quantities, and to provide a construction and arrangement of parts whereby the quantity of liquid so delivered may be varied according to the requirements of the commodity being canned.

Further objects are to provide a simple adjustment of the parts for varying the quantity of liquid to be delivered and to provide associated therewith indicating means showing the quantity to be dispensed.

These objects are accomplished by a member having spaced pockets therein and means for controlling the supply of liquid to said pockets at certain positions and means controlling the discharge thereof to the cans at certain other positions. The liquid is supplied to the pockets by submerging the pocketed member in a pan and providing means for admitting the liquid thereto at the said positions which are located between the discharge positions. The pan is provided with spaced discharge openings between which and the pocketed member there is relative movement to bring said openings and pockets into registration successively as the pan and pocketed member are given relative movement.

A member is provided for control of the discharge of the pockets through the openings in the pan which is adjustable for determining the number of pockets discharging for each relative movement or cycle of movements of the pan and pocketed member. The adjustment is accomplished by providing groups of apertures in the control member ranging from one in the first group to a number corresponding to the total number of discharge openings in the pan and mounting the control member for travel across the openings in the pan; the openings in the control member being spaced so that when the first

opening of the largest group registers with the corresponding aperture in the pan corresponding to this group, no aperture in any other group will register and when the second aperture of this group registers with said opening the first of the next smaller group will register, and when the third aperture of the largest group registers, the second of the second group will register, and the first of the third group and so on. Means is associated with the control to indicate the position thereof relative to the pan and the condition of the openings as to being open and closed.

The drawings illustrate an embodiment of the invention and the views therein are as follows:

Figure 1 is a vertical section through a canning machine embodying the principles of the invention.

Figure 2 is a section on line 2—2 of Figure 1 showing the juice pan in plan and illustrating the relation of the cover ring to the pocketed member, the position of the aperture in the pocket member being shown by dotted lines, except where they are shown beneath apertures in the cover ring.

Figure 3 is a view similar to Figure 2 showing the relation of the apertures in the cover ring to the discharge apertures in the juice pan.

Figure 4 is a similar view with the cover ring removed and showing the relation of the measuring pockets to the cups for measuring solids.

Figure 5 is a view of the juice pan with the turret on which the measuring cups and pockets are mounted removed and illustrating the relation of the apertures in the juice pan to those in the control member mounted on the under side thereof, the apertures in the control member being shown dotted, except where they are shown in registration with the apertures in the juice pan.

Figure 6 is a view showing the under side of the juice pan and showing the grouping of the apertures in the control member and the relation thereof to the apertures in the juice pan.

Figures 2 to 6 inclusive show the parts as

in the same relation namely, the second position of the apertures in the control ring with the various parts in position for discharge therethrough.

5 Figure 7 is a fragmentary detail showing the manner of detachably securing the control ring to the bottom of the juice pan.

Figure 8 is a detail showing the overflow from the pan and the supplemental reservoir connected therewith.

10 Figure 9 is a fragmentary detail showing the indicator connected with the control ring and the calibrations of the side of the pan for cooperation therewith.

15 Referring to the drawings in detail, the numeral 10 designates a frame by which the mechanism of the machine is carried and 11 designates a hopper for feeding solid materials to the adjustable measuring cups 12 revolvably mounted in a container as a "juice pan" 13. The upper sections of the measuring cups are integral and such part is connected with the shaft 14 which is rotated by the driving shaft of the machine (not shown). The lower sections of the cups are telescoped with the upper sections and will naturally be carried along therewith as they revolve also revolving the turret 15 with which the lower sections are integrally formed.

20 The juice pan is provided with a discharge aperture 16 for the measuring cups and with a plurality of spaced openings as indicated at 17, 18 and 19 in Figure 5 of the drawings. There may be any number of these openings according to the given situation. In the present illustration, three of such openings are shown which will illustrate the principles of the invention without limiting the applicant to any definite number.

25 Connected with the juice pan is a control member in the form of a ring 20 shown clearly in Figures 1 and 6 having a plurality of groups of apertures 21, and 22 and the single aperture 23, spaced to correspond to each opening in the pan. The apertures are so positioned relative to the apertures in the preceding group of greater number that when the first aperture of the greatest group is in registration with the corresponding opening in the pan that the other openings in the pan will be closed. When the second opening in this group is brought into registration as illustrated in the drawings, the first opening in the next smaller group will be opened and when the third opening in this largest group is brought into registration, the openings corresponding to the first three positions will be opened and so on for any number of openings in the pan.

30 Mounted within the pan and, as shown, forming a peripheral extension of the turret 15 is the juice measuring member provided with a plurality of pockets 24, 25, 26, 27 and 28, one corresponding to each of the meas-

uring cups. This turret, as clearly shown in Figure 1, rests flush against the bottom of the pan and has a movement relative thereto and in the present instance, the turret is revolvable relative to the pan which latter is relatively stationary in its position. These pockets are so positioned that they are brought by the revolution of the turret successively into registration with the openings in the pan, the pockets being open both on the top and bottom sides thereof.

As will be observed by reference to Figure 4 of the drawings, the pockets constitute apertures in the said peripheral extension about which are formed upstanding marginal ribs constituting a deepening thereof and located between these pockets are ribs 29 which are spaced from the marginal ribs to permit a free flow of the liquid from one side to the other of said pockets, beneath a stationary member acting as a cover member 30 for the pockets.

This cover member is in the form of a ring to correspond with the path of travel of the pockets and the openings therein are positioned to lie between the various discharge openings in the pan. These openings are clearly illustrated in Figures 2 and 3 of the drawings and are designated by the reference characters 31, 32, 33, 34 and 35, the latter three constituting in effect one opening and being of greater extent than the others due to the greater space available therefor, inasmuch as the discharge openings are located in a sector of a circle corresponding to substantially half of the periphery at hand. Thus it will be seen that as the pockets revolve, they will be refilled between each discharge opening that is free to discharge under the regulation of the control ring 20. The ring 30 is operatively mounted in any suitable manner as by cleats or brackets 36 secured both to the ring and to the juice pan.

The mounting of the control ring 20 is shown in Figures 6 and 7 by means of spring fingers 37 preferably of spring material attached to the bosses 38 on the bottom of the pan by means of screws 39. The tension of these fingers on the control ring may be regulated by the set screws 40 located intermediate bosses 38 and the ring 20 as clearly shown in Figure 7 of the drawings.

The proper centering of the control ring is accomplished by forming on the bottom side of the pan an annular shoulder 41 as shown in Figures 1 and 7 of the drawings, and the turning movement of this ring is accomplished by an arm 42 connected with and extending radially from the ring to a position of convenience for the operator of the machine. This arm or handle is provided with an indicating pointer 43 adapted to be moved together with the turning movement of the ring over certain calibrations 44 formed on the side of the juice pan. There is one of

these points for each position of the control ring relative to the openings at each position of the control ring for bringing apertures thereof into registration with one, two, three and so forth openings in the pan, the position for closing the apertures being short of the first of these calibrations and indicated by the zero designation as shown in Figure 9.

The juice pan as shown in Figure 1 of the drawings is located above the hoppers 45 for directing the material to the receptacles 46 on the receptacle moving turret 47. These receptacles are fed onto this turret and remain thereon through a partial revolution of the said turret when they are directed off and conveyed away in any suitable manner. In the meantime, a measured quantity of material has been deposited in each of the receptacles together with the suitable number of measured quantities of juice or preserving fluid, the number of shots to each can being dependent upon the condition of the fruit or vegetable being canned and upon the natural juiciness of this commodity.

The discharge apertures in the juice pan are therefore positioned so as to correspond with the path of travel of cans on the turret and the arrangement of the control ring is such that the adjustment thereof to the apertures in the pan may be made by a comparatively slight angular movement of the said ring. The juice pan is provided with an overflow reservoir 48 separated from the main pan by the wall 49 which is depressed slightly below the upper plane of the wall 50 and from this reservoir a pipe 51 leads to any suitable receptacle which may be provided carrying off the surplus liquid from the juice pan.

Of course, the filling machine illustrated may be modified and changed in various ways without departing from the invention herein set forth and hereafter claimed.

I claim:—

1. In a can filling machine, a receptacle having spaced openings therein and means moving along a path for positioning confined quantities of liquid in communication with said openings and means for determining the number of openings discharging for each movement of the means along said path.

2. In a can filling machine a container member having discharge openings, a member associated therewith and having pockets therein adapted to communicate with the interior of the pan and with said openings one of said members having a travel through a cycle to bring the pockets alternately into communication with the openings and with the interior of the container member, and means determining the number of apertures discharging for each cycle of travel.

3. In a can filling machine, a receptacle having discharge openings, means associated

therewith adapted for receiving from the receptacle and confining quantities of liquid, said receptacle and means having a cycle of relative movement therebetween whereby the confined liquid is brought into communication with said discharge openings and means for determining the number of said openings discharging for each cycle of movement.

4. In a can filling machine, a liquid container having a plurality of spaced discharge openings, a pocketed member having a cycle of travel over said openings, said pockets each having an opening adapted to communicate with the discharge openings and an opening adapted to communicate with the interior of the container, a stationary member having spaced passages lying between the discharge openings adapted to communicate with said pockets between each communication with the discharge opening, and means controlling the discharge openings for determining the number thereof discharging for each cycle of travel of the pocketed member.

5. In a can filling machine, a pan having a plurality of openings in the pan lying in spaced relation on a circle, a member rotatable relative to the pan having apertures therein allocated to register with the openings of the pan singly or in multiple according to the arc of rotation of the member, and means for placing a measured quantity of liquid in communication with the openings of the pan.

6. In a can filling machine, a pan having a plurality of openings in the pan lying in spaced relation on a circle, a member rotatable relative to the pan having apertures therein allocated to register with the openings of the pan singly or in multiple according to the arc of rotation of the member, and means for placing a confined measured quantity of liquid in communication with the openings of the pan.

7. In a can filling machine, a circular pan having equally spaced openings therein on a sector of a circle, a member rotatable relative to the pan and having apertures allocated on a circle coinciding with the above mentioned circle, said apertures being so spaced as to add one aperture progressively to the uncovered apertures of the greatest group and the openings in the pan being positioned so that when the rotatable member is in one position no opening of the pan will be uncovered and when in successive positions one, two and three openings will be uncovered, and means for positioning a measured charge of liquid in communication with said openings.

8. In a can filling machine, a pan for containing liquid having a plurality of spaced openings arranged on a portion of a circle, a member positioned against said pan and adapted to cover said openings, said mem-

ber having apertures therein allocated to correspond in number to the number of openings in the pan and positioned so that when the first, second, and succeeding openings of the greater group are brought to position to uncover the opening in the pan corresponding to the allocation, the correspondingly allocated openings of the pan will be uncovered up to the maximum number, and means for periodically placing measured quantities of liquid in communication with the openings of the pan.

9. In a can filling machine, a pan having a plurality of equally spaced openings therein, a member movable across said openings and adapted in one position to close the same, said member having allocations of apertures therethrough corresponding to and adapted to register with the openings in the pan, the number of apertures in said allocations ranging from one to three, the apertures in the lesser allocations being arranged to progressively uncover the corresponding openings as the second and third aperture of the larger allocation are brought into registration with the corresponding opening.

10. In a can filling machine, a pan having a plurality of openings therein, a member covering said openings, and movable across the same, said member having groups of apertures therein, each group corresponding to an opening in the pan and ranging in number from one to the number of openings in the pan, the apertures in the various groups being positioned to come successively into registry with the opening corresponding to its group as the member is moved across the openings in one direction, the first aperture of each group registering with said corresponding opening simultaneously with the second aperture of the next larger group.

11. In a can filling machine, a pan having a plurality of openings therein, a member covering said openings and movable across the same, said member having groups of apertures therein, each group corresponding to an opening in the pan and ranging in number from one to the number of openings in the pan, the apertures in the various groups being positioned to come successively into registry with the opening corresponding to its group as the member is moved across the openings in one direction, the first aperture of each group registering with said corresponding opening simultaneously with the second aperture of the next larger group and means for delivering measured quantities of liquid to said openings.

12. In a can filling machine a member having openings therein, means movable across said openings in successive cycles and having pockets therein provided with apertures adapted to register successively with said openings, means supplying liquid to said

pockets and means for controlling the number of openings discharging for each cycle.

13. In a can filling machine, a pan having discharge openings therein, a measuring turret revoluble in said pan and a discharge for said turret, a pocketed member secured to the turret and movable over said openings so as to bring the pockets successively into communication therewith, and means controlling the discharge of said pockets through said openings.

14. In a can filling machine, a pan having a plurality of discharge openings, a turret having a plurality of measuring cups thereon, rotatably mounted in said pan, a member secured to the turret and having a pocket corresponding to each cup adapted to be brought into communication successively with the discharge openings, means controlling the filling of said pockets and means controlling the number of discharges of each pocket for each rotation of said turret.

15. In a can filling machine a rotatable turret having a plurality of measuring cups thereon, and a corresponding number of measuring pockets, a liquid containing pan in which said turret is mounted, said pan having a plurality of spaced discharge openings positioned to communicate successively with the bottom of the pockets as the turret rotates, a ring having apertures therein adapted to communicate with the top of the pockets as the turret rotates, a member on the underside of the pan and adapted to cover some of said openings, said member having apertures, manual means to rotate said member so that one or any number to the maximum of said openings may be opened at the will of the operator and calibrations indicating the number open.

In testimony whereof I have signed my name to this specification.

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